

We claim:

1. A computerized method for processing a query directed to a multidimensional database comprising:

5 determining a hierarchical context for each member of an input data set specified by the query; and

processing the query using the non-calculated members specified by the input data set and any calculated members of the database that is within the hierarchical context of at least one of the members of the input data set.

10

2. The computerized method of claim 1 wherein processing the query includes generating an output data set to include the members of the input data set and the encompassed calculated members of the database.

15

3. The computerized method of claim 1, wherein processing the query includes processing the query with an OLAP server.

20

4. The computerized method of claim 1, further comprising performing the determining step and the processing step when the query includes an extension directing an OLAP server to include calculated members.

5. The computerized method of claim 1, wherein determining a hierarchical context for each member includes identifying within a dimension of the database each member's siblings, the member's descendants and the descendants of the siblings.

25

6. A computerized method for processing a query direct to a multidimensional database comprising:

initializing an output data set to an empty set;

copying each member of an input data set specified by the query to the output

30 data set;

for each respective member of the input data set, identifying a maximal sub-hierarchy of a dimension hierarchy that encompasses the corresponding member;

adding any calculated member of the database to the output data set when the calculated member is encompassed by an identified sub-hierarchy; and

5 processing the query using the output data set.

7. The computerized method of claim 6, wherein processing the query includes processing the query with an OLAP server.

10 8. The computerized method of claim 7, wherein each step of the method is performed when the query includes an extension directing an OLAP server to automatically include calculated members of the database.

15 9. The computerized method of claim 6, wherein determining the maximal sub-hierarchy for each member includes identifying within a dimension of the database each member's siblings, the member's descendants and the descendants of the siblings.

10. A computer-readable medium having computer-executable instructions for performing a method for processing a query directed to a multidimensional database, the 20 method comprising:

determining a hierarchical context for each member of an input data set specified by the query; and

processing the query using the non-calculated members specified by the input data set and any calculated members of the database that are within the hierarchical 25 context of at least one of the members of the input data set.

11. The computer-readable medium of claim 10, wherein processing the query includes generating an output data set to include the members of the input data set and the encompassed calculated members of the database.

12. The computer-readable medium of claim 10, wherein processing the query includes processing the query with an OLAP server.
13. The computer-readable medium of claim 10, further comprising performing the determining step and the processing step when the query includes an extension directing an OLAP server to include calculated members.
5
14. The computer-readable medium of claim 13, wherein determining a hierarchical context for each member includes identifying within a dimension of the database each member's siblings, the member's descendants and the descendants of the siblings.
10
15. A computerized system comprising:
a processor and a computer-readable medium;
an operating environment executing on the processor from the computer-readable
15 medium; and
an OLAP server executing within the operating environment and maintaining a multidimensional database, wherein the OLAP server processes a database query by determining a hierarchical context for each member of an input data set specified by the query; and including in the processing of the query each non-calculated member specified
20 by the input data set and any calculated members of the database that are within the hierarchical context of at least one of the members of the input data set.
16. The computerized system of claim 15 wherein the OLAP server generates an output data set to include the members of the input data set and the encompassed
25 calculated members of the database.
17. The computerized system of claim 15, wherein the OLAP server receives the query from an OLAP client application via a query processor.

18. The computerized system of claim 15, wherein for each member of the input data set the OLAP server identifies, within a dimension of the database, each member's siblings, the member's descendants and the descendants of the siblings.

5 19. The computerized system of claim 15, wherein the database is a relational database system.

20. A computerized method for processing a query directed to a multidimensional database, wherein the query specifies an input data set, the method comprising:

10 determining whether the query includes an extension directing an OLAP server to automatically exclude calculated members of the input data set during the processing of the query; and

15 based on the determination, processing the query using the non-calculated members specified by the input data set.

21. The computerized method of claim 20, wherein processing the query includes: initializing an output data set to an empty set; copying the non-calculated members of the input data set to the output data set;

and

20 processing the query using the output data set.

22. The computerized method of claim 21, wherein processing the query includes processing the query with an OLAP server.

25 23. A computer-readable medium having computer-executable instructions for performing a method of processing a query directed to a multidimensional database, the method comprising:

determining whether the query includes an extension directing an OLAP server to automatically exclude calculated members of the input data set during the processing of the query; and

based on the determination, processing the query using the non-calculated members specified by the input data set.

24. The computer-readable medium of claim 23, wherein processing the query
5 includes:

initializing an output data set to an empty set;
copying the non-calculated members of the input data set to the output data set;
and
processing the query using the output data set.

10

25. The computer-readable medium of claim 23, wherein processing the query
includes processing the query with an OLAP server.

26. A computerized system comprising:

15 a processor and a computer-readable medium;
an operating environment executing on the processor from the computer-readable medium; and
an OLAP server executing within the operating environment and maintaining a multidimensional database, wherein the OLAP server processes a database query by
20 determining whether the query includes an extension directing the OLAP server to automatically exclude calculated members of an input data set; and based on the determination, processing the query using only the non-calculated members specified by the input data set.

25 27. The computerized system of claim 26 wherein the OLAP server initializing an output data set to an empty set, copies the non-calculated members of the input data set to the output data set, and processes the query using the output data set.

28. The computerized system of claim 26, wherein the OLAP server receives the
30 query from an OLAP client application via a query processor.

29. The computerized system of claim 26, wherein the database is a relational database system.

30. A computerized method for processing a query directed to a multidimensional database comprising:

- parsing a received query to identify whether the query contains a query extension that indicates specifically how calculated members should be handled in processing the query;
- when a query directive is identified that directs that calculated members be excluded from the output of the query then processing the query using the non-calculated members specified by the input data set; and
- when a query directive is identified that directs that calculated members be included in the output of the query then performing at least the steps of:
 - determining a hierarchical context for each member of an input data set specified by the query, and
 - processing the query using the non-calculated members specified by the input data set and any calculated members of the database that is within the hierarchical context of at least one of the members of the input data set; and

31. The computerized method of claim 30 wherein processing the query using the non-calculated members specified by the input data set and any calculated members of the database includes generating an output data set to include the members of the input data set and the encompassed calculated members of the database.

32. The computerized method of claim 30, wherein processing the query using the non-calculated members specified by the input data set and any calculated members of the database includes processing the query with an OLAP server.

33. The computerized method of claim 30, wherein determining a hierarchical context for each member includes identifying within a dimension of the database each member's siblings, the member's descendants and the descendants of the siblings.